Microcontroller Technical Information

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IE-789488-NS-EM1 Emulation Board for Microcontrollers μPD78947x, μPD78948x Usage Restrictions		Document No.	ZBG-CD-06-0093		1/1
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		Issued by	Development Tool Group Multipurpose Microcomputer Systems Division 4th Systems Operations Unit NEC Electronics Corporation		
Related documents	IE-789488-NS-EM1 User's Manual: U16492EJ1V0UM00	Notification classification	√	Usage restriction	
				Upgrade	
				Document modification	
				Other notification	

1. Affected product

Product	Outline	Control Code[Note]
IE-789488-NS-EM1	Emulation board for microcontrollers μPD78947x, μPD78948x	A, B, C, D, E

2. Restriction details

Caution No. 6 has been added. See the attachment for details.

3. List of restrictions

See the attachment.

4. Document revision history

Document Number	Date Issued	Description
SBG-TT-0190	October 29, 2002	Addition of specification (No. 4)
ZBG-CD-06-0093	October 31, 2006	Addition of caution item (No. 6)

Note The "control code" is the second digit from the left in the 10-digit serial number staring with E.
If the product has been upgraded, a label indicating the new version is attached to the product and the x in V-UP LEVEL x on this label indicates the control code.

Notes on Using IE-789488-NS-EM1

This document describes restrictions applicable only to the emulator and restrictions that are planned for correction in the emulator.

Refer to the following documents for the restrictions in the target device.

- User's manual of target device
- Restrictions notification document for target device

Also refer to the user's manual of the emulator for cautions on using the emulator.

1. Product Version

Part number: IE-789488-NS-EM1

Control Code[Note]	Remark
A	–
B	–
C	–
D	–
E	–

Note The "control code" is the second digit from the left in the 10-digit serial number staring with E. If the product has been upgraded, a label indicating the new version is attached to the product and the x in V-UP LEVEL x on this label indicates the control code.

2. Product History

No.	Bugs and Changes/Additions to Specifications	Control Code				
		A	B	C	D	E
1	Bug in emulating LCD function of μPD78947x microcontrollers	×	√	√	√	√
2	Bug in emulating A/D function of μPD78948x microcontrollers	×	×	×	√	√
3	Contact bug between IE-78K0S-NS-A emulation board fixing stays (metal fittings) and test pin of the I/O board	×	×	√	√	√
4	Addition of support for μPD789479, μPD78F9479, μPD789489, and μPD78F9489	–	–	–	–	√

×: Applicable, √: Not applicable (change of specification), –: Not relevant

3. Details of Bugs and Added Specifications

No. 1 Bug in emulating LCD function of μPD78947x microcontrollers

[Description]

If the LIPS0 bit in the LCDM0 register is set to 0 (GND-level output at segment/common pins) when emulating the LCD function of the μPD78947x microcontrollers, the voltage from the segment and common pins will not stabilize.

The voltage will not stabilize within the range 0 V ≤ Segment/common pin voltage ≤ V_{LC2}

[Workaround]

There is no workaround. This bug has been corrected in control code B and later.

No. 2 Bug in emulating A/D function of μPD78948x microcontrollers

[Description]

Conversion is not performed normally if AV_{DD} is 3 V or lower when emulating the A/D function of the μPD78948x microcontrollers.

Conversion will not be performed normally within the range 3 V ≥ AV_{DD}

[Workaround]

There is no workaround. This bug has been corrected in control code D and later.

No. 3 Contact bug between IE-78K0S-NS-A emulation board fixing stays (metal fittings) and test pins of the I/O board

[Description]

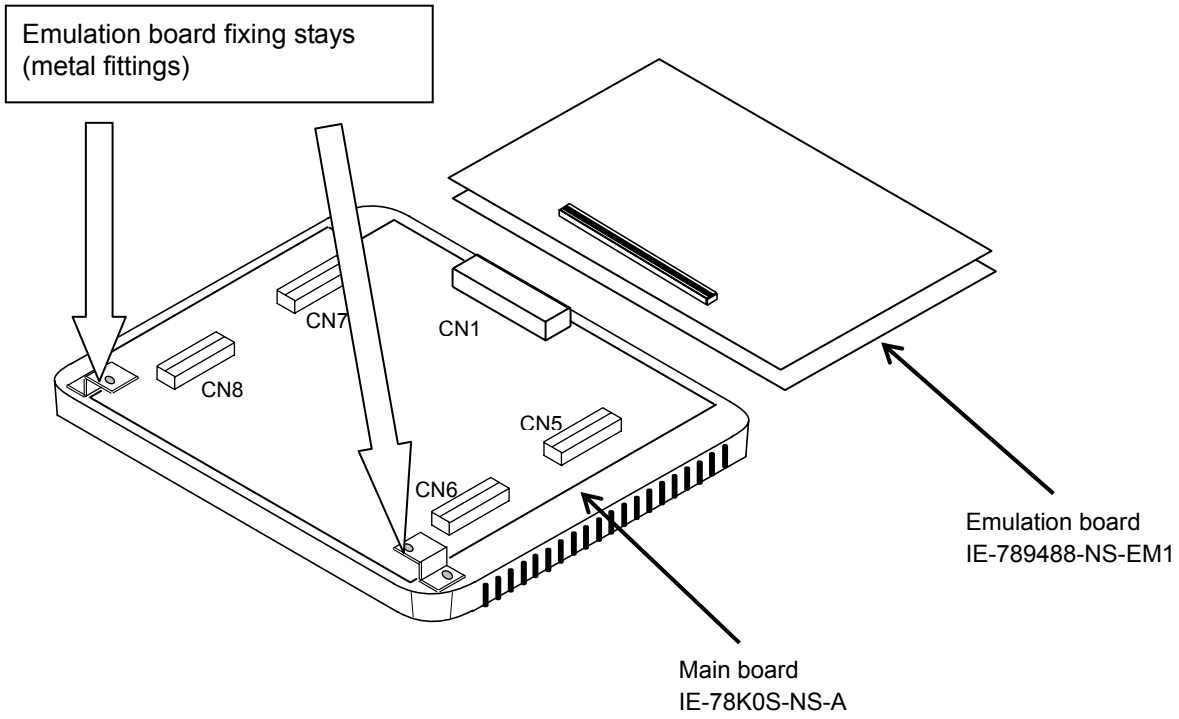
When connecting the IE-789488-NS-EM1 to the IE-78K0S-NS-A control code A or B, test pins of the I/O board (CP8 and CP38) contact the IE-78K0S-NS-A emulation board fixing stays (metal fittings).

[Workaround]

This bug has been corrected in control code C and later. In addition, the metal fittings have been replaced with the plastic brackets.

If you have not yet upgraded to the IE-789488-NS-EM1 control code C or IE-78K0S-NS-A control code D, remove the fixing stays. Figure 3-1 illustrates the position of the fixing stays.

Figure 3-1. Position of Emulation Board Fixing Stays (Metal Fittings)



No. 4 Addition of support for the μPD789479, μPD78F9479, μPD789489, and μPD78F9489

[Description]

The μPD789479, μPD78F9479, μPD789489, and μPD78F9489 are supported in IE-789488-NS-EM1 control code E or later.

[Caution]

Be sure to use device file DF789488 V1.10 or later when using IE-789488-NS-EM1 control code E. Use DF789488 V1.01 when using an IE-789488-NS-EM1 control code A, B, C or D.

IE-789488-NS-EM1 Control Code	Device File Package (DF789488) Version	Supported CPU
E or later	V1.10 or later	μPD789477, μPD789478, μPD78F9478, μPD789488, μPD78F9488, μPD789479, μPD78F9479, μPD789489, μPD78F9489
A, B, C, D	V1.01	μPD789477, μPD789478, μPD78F9478 μPD789488, μPD78F9488

4. Cautions

(1) Emulation specification when the x4 subsystem clock is selected (1)

When the use of the user-mounted clock is selected, the x4 multiplier does not multiply the mounted subsystem clock by 4. Instead, a x4 clock, which is generated by the fixed 131.072 kHz (4.194304 MHz/32) clock based on the clock mounted on the IE-789488-NS-EM1 (X3; 4.194304 MHz), is selected. In addition, the subsystem clock of 32.768 kHz is generated by dividing the fixed clock 131.072 kHz.

(2) Emulation specification when the x4 subsystem clock is selected (2)

The x4 subsystem clock cannot be stopped by HALT. As a result, the IE-789488-NS-EM1 starts operation one subsystem clock earlier after HALT is released.

(3) Emulation specification for the port/segment switching mask option

The port and segment cannot be switched even if the port function registers (PF7 and PF8) are set so.

In addition to the port function register settings, set SW8 to SW19 in the IE-789488-NS-EM1. For details of the SW settings, refer to **3.7.2 Mask option for pin functions (1) Port/segment pin switching**.

(4) Emulation specification for LCD function of μPD78948x microcontrollers (1)

Bit 6 (VAON0) of LCD display mode register 0 (LCDM0) is accessible but the access is not valid. In addition to the change of the VAON0 bit setting, set the J9 of the IE-789488-NS-EM1 to 2-3 shorted. For the J9 setting details, refer to **3.3.1 Jumper setting for subseries selection**.

(5) Emulation specification for LCD function of μPD78948x microcontrollers (2)

Bit 0 (GAIN) of LCD voltage boost control register 0 (LCDVA0) is accessible but the access is not valid. In addition to the change of the GAIN bit setting, the voltage selected by setting the SW4 (LCD panel voltage setting) of the IE-789488-NS-EM1 is used as the panel voltage. For the SW4 setting details, refer to **3.3.2 LCD emulation setting for μPD789489 Subseries**.

(6) Bug whereby certain port pins become high level until integrated debugger starts

During the period from power-on to the IE system (IE-78K0S-NS or IE-78K0S-NS-A + IE-789488-NS-EM1) until integrated debugger (ID78K0S-NS) startup (main window appears), an on-chip pull-up resistor (resistance of 30 kΩ (typ.)) is connected to the following ports and the voltage at these ports becomes high level (+5 V).

- Port 0 (P00 to P07)
- Port 1 (P10, P11)
- Port 3 (P30 to P34)
- Port 6 (P60 to P67)

(7) General cautions on handling this product

(7)-1. Circumstances not covered by product guarantee

- If the product was disassembled, altered, or repaired by the customer
- If it was dropped, broken, or given another strong shock
- Use at overvoltage, use outside guaranteed temperature range, storing outside guaranteed temperature range
- If power was turned on while the AC adapter, interface cable, or target system connection was in an unsatisfactory state
- If the AC adapter cable, interface cable, target cable, or the like was bent or pulled excessively
- If an AC adapter other than the one supplied with the product is used
- If the product got wet
- If the product and target system were connected while a potential difference existed between the GND of the product and the GND of the target system
- If a connector or cable was removed while the power was being supplied to the product
- If an excessive load was placed on a connector or socket

(7)-1. Safety precautions

- If used for a long time, the product may become hot (50°C to 60°C). Be careful of low temperature burns and other dangers due to the product becoming hot.
- Be careful of electrical shock. There is a danger of electrical shock if the product is used as described above in **(7)-1 Circumstances not covered by product guarantee**.